



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/497,515	02/04/2000	Shuji Hitomi	Q57834	7579

7590 09/30/2005
Sughrue Mion Zinn MacPeak & Seas PLLC
2100 Pennsylvania Avenue NW
Washington, DC 20037

EXAMINER

MERCADO, JULIAN A

ART UNIT PAPER NUMBER

1745

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/497,515

Applicant(s)

HITOMI, SHUJI

Examiner

Julian Mercado

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,6-10 and 21-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,6-10 and 21-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 1, 2005 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 22 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 22 and 33 recites the limitation "said substrate" in line 2 of each claim. There is insufficient antecedent basis for this limitation in the claim. It appears to the examiner that the substrate is the catalyst layer. If so, the claim is unclear as to how the portion of pores of the catalyst layer is mutually exclusive from an inside portion thereof.

Claim Rejections - 35 USC § 102 and 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6, 10, 21-25 and 29-33 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fukuoka et al. (U.S. Pat. 5,723,173).

The rejection is maintained for the reasons of record and for the additional reasons to follow in response to applicant's salient arguments. Applicant's arguments filed with the present amendment have been fully considered, however they are not persuasive.

The examiner notes applicant's amendment to the present claims which now recites, *inter alia*, that the numerous pores are formed by only said polymer. By this limitation, applicant submits that in Fukuoka et al. the gas channels [7] held readable on the claimed pores are formed by both the solid polymer electrolyte [5] and fluorocarbon polymer [11]. This argument is not persuasive. By this argument, applicant appears to argue that the solid polymer electrolyte forms a boundary to the gas channels. The examiner asserts, however, that the pores are actually present *throughout* the fluorocarbon polymer layer. (emphasis added) Even assuming *arguendo*

Art Unit: 1745

that the pores of the solid polymer electrolyte and fluorocarbon polymer in Fukuoka et al. are (at least along the interface) defined by the solid polymer electrolyte, the configuration in Fukuoka et al. is no different from the configuration shown in, e.g. Figure 4 of the present application, where the solid polymer electrolyte [42] would arguably close off or border along the open faces of the pores [43]. (noting also that the Figure is a cross-sectional view)

With respect to new claims 23 and 24, as these claims recite a product-by-process limitation of obtaining the porous polymer by a phase inversion process, this process limitation is not given patentable weight as the limitation does not give breadth or scope to the product claim. The claimed product appears to be the same or similar to the prior art product insofar as being a fluorocarbon polymer having pores. In the event that any differences can be shown by the product of the product-by-process claims 23 and 24, such differences would have been obvious to the skilled artisan as a routine modification of the product absent of a showing of unexpected results. *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985).

(new rejection)

Claims 1, 3, 6, 10, 21- 25 and 29-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Cabasso et al. (U.S. Pat. 5,783,325).

Cabasso et al. teaches in a gas diffusion layer a catalyst layer and a porous polymer such as PVDF having a porosity in a gas diffusion layer and obtained by a phase inversion process. (col. 6 line 36 et seq.) The catalyst layer contains a solid polymer electrolyte such as Nafion. (col. 10 line 25 et seq.)

Art Unit: 1745

Claims 7-9 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuoka et al.

Claims 7-9 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cabasso et al.

The rejection of claims 7-9 and 26-28 based on either Fukuoka et al. or Cabasso et al. is herein discussed in parallel.

This rejection is maintained for the reasons already of record as previously set forth for claims 7-9. It is maintained that the degree of porosity or porosity size are, absent of unexpected results, optimizable parameters for a result-effective variable, for the reasons already of record. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 1745

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to be "P. Ryan", with a large, loopy "M" or "R" shape above it.


PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER